

Remarks

Applicants respectfully request reconsideration of the present U.S. Patent application as amended herein. Claims 1, 5-9, 12, 15 and 23 have been amended. Claims 3, 4 and 16 have been canceled. No claims have been added. Thus, claims 1, 2, 5-15 and 17-27 are pending.

OBJECTIONS TO THE SPECIFICATION

The specification was objected to for various reasons set forth in the Office Action. The serial number and filing date of the provisional application are provided herein. The second use of the variable “L” has been amended to “L_R” for clarity. As to the objection to the formation of blocks provided on page 14, Applicants are unclear as to the basis for this rejection. There appears to be no recitation of MtxN not being a multiple of L. Applicants submit herewith two papers that support the assertion that “Rayleigh fading channel taps” conveyed meaning to one of ordinary skill in the art at the time of filing and that use and purpose would have been known to one of ordinary skill in the art. Accordingly, Applicants request that the objections to the specification be withdrawn.

CLAIM OBJECTIONS

Claims 5, 7 and 13 were objected to for informalities. The informalities identified in the Office Action have been corrected herein. Accordingly, Applicants request that the objections to the claims be withdrawn.

CLAIM REJECTIONS – 35 U.S.C. 102(b)

Claims 1-7, 9-13, 15-17 and 21 were rejected as being anticipated by U.S. Patent No. 6,473,467 issued to Wallace, et al. (*Wallace*). Claims 3, 4 and 16 have been canceled. Therefore, the rejection of claims 3, 4 and 16 is moot. For at least the reasons set forth below, Applicants submit that claims 1, 2, 5-7, 9-13, 15, 17 and 21 are not anticipated by *Wallace*.

Claim 1 recites:

receiving content from a host device for transmission via two or more tones in a multicarrier communication channel from two or more antenna(e); and

distributing elements of the received content across one or more of the antenna(e) and tone(s) to introduce full-order transmit diversity by cyclically dispersing elements of the received content across M_t transmit antennas, and a number (N) of multicarrier tones for each of a plurality of Rayleigh fading channel taps (L), wherein the cyclical dispersion of the elements of the received content provides full-order transmit diversity according to $M_t \cdot M_r \cdot L$, where M_r is the number of receive antennae.

Thus, Applicants claim providing full-order transmit diversity based on transmit antennae, number of multicarrier tones and Rayleigh fading channel taps. Claim 15 similarly recites providing full-order transmit diversity based on transmit antennae, number of multicarrier tones and Rayleigh fading channel taps.

In contrast, *Wallace* discloses use of channel state information (CSI) to precondition transmissions between transmitter units and receiver units. See Abstract. Specifically, *Wallace* discloses that the preconditioning is achieved by matrix multiplication that includes an eigenvector matrix related to transmission loss from transmit antennae to the receive antennae. See col. 13, lines 50-67. The Office Action

equates the eigenvector matrix to the Rayleigh fading channel taps recited in the claims.

See page 4.

Wallace discloses that monitored channel information including C/I as well as amplitude and phase characterizations of the various propagation paths. This is the CSI that is used to precondition the transmissions. See col. 8, lines 53-64. In contrast, Rayleigh fading is a statistical model for the effect of a propagation environment on a radio signal, such as that used by wireless devices. It assumes that the magnitude of a signal that has passed through such a transmission medium will vary randomly, or fade, according to a Rayleigh distribution - the radial component of the sum of two uncorrelated Gaussian random variables. Thus, the eigenvector matrix of *Wallace* cannot be equated to the Rayleigh fading channel taps recited in the claims. Therefore, *Wallace* cannot anticipate the invention as recited in claims 1 and 15.

Claims 2, 5-7, 9-13 depend from claim 1. Claims 17 and 21 depend from claim 15. Because dependent claims include the limitations of the claims from which they depend, Applicants submit that claims 2, 5-7, 9-13, 17 and 21 are not anticipated by *Wallace* for at least the reasons set forth above.

CLAIM REJECTIONS – 35 U.S.C. § 103(a)

Claims 14, 18-20 and 22-27 were rejected as being unpatentable over *Wallace*. As discussed above, *Wallace* does not teach or suggest providing full-order transmit diversity based on transmit antennae, number of multicarrier tones and Rayleigh fading channel taps as recited in the independent claims. Each of claims 14, 18-20 and 22-27

either includes this limitation or depends from a claim that recites this limitation.

Therefore, *Wallace* cannot suggest the invention as recited in claims 14, 18-20 and 22-27.

ALLOWABLE SUBJECT MATTER

Claim 8 was objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. In light of the discussion above, Applicants submit that claim 8 as well as the remaining claims are in condition for allowance.

CONCLUSION

For at least the foregoing reasons, Applicants submit that the rejections have been overcome. Therefore, claims 1, 2, 5-15 and 17-27 are in condition for allowance and such action is earnestly solicited. The Examiner is respectfully requested to contact the undersigned by telephone if such contact would further the examination of the present application. Please charge any shortages and credit any overcharges to our Deposit Account number 02-2666.

Respectfully submitted,
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